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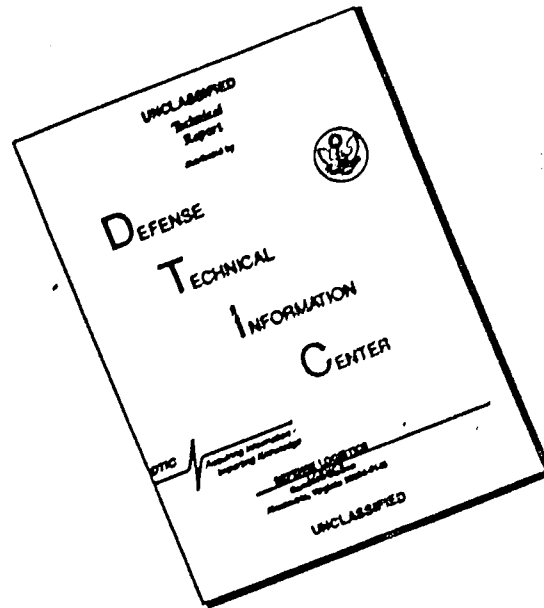
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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AC M-P (M) (15 Jan 68) FOR OT RD-670610

18 January 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 52d
Combat Aviation Battalion, Period Ending 31 July 1967 (U)

TO: SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation by USACDC in accordance with paragraph 6f, AR 1-19 and by USCONARC in accordance with paragraph 6c and d, AR 1-19. Evaluations and corrective actions should be reported to ACSFOR OT within 90 days of receipt of covering letter.

2. Information contained in this report is provided to insure appropriate benefits in the future from Lessons Learned during current operations, and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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DEPARTMENT OF THE ARMY
AVEDC 2ERS, 52d COMBAT AVIATION BATTALION
APO San Francisco 96310
"FLYING STARS"

AVED-DC

10 August 1967

SUBJECT: Letter of Transmittal


TO: ~~Commanding Officer~~
17th Combat Aviation Group *25 AUG 67*
ATTN: AVED-DC
APO San Francisco 96240

TO: Assistant Chief of Staff for Force Development
Headquarters, Department of the Army
Washington DC, 20310

1. Transmitted herewith is two (2) copies of 52d Combat Aviation Battalion letter, AVEDC 2ERS: Operational Report for Quarterly Period ending 31 July 1967, Report Control Symbol 3001-05.
2. Degraded unclassified who separated from classified inclosures.

REPH: ONLY ALL:

2 Incl
as


JAMES G. BLUMENTHAL
MAJ, CG
Adjutant

This report received at Hqs, Department of the Army without indorsements. To preclude further delay in benefits gained from the lessons learned herein, this report is published without complete indorsements.

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52D CBT AVN BN



O R L L

(MAY JUNE JULY)

1967

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DOD DIR 5200.10*

ACSFOR-RD File
670610

C O N F I D E N T I A L

DEPARTMENT OF THE ARMY
HEADQUARTERS, 52D COMBAT AVIATION BATTALION
APO San Francisco 96318
"Flying Dragons"

AVGD-CC

7 August 1967

SUBJECT: Operational Report for Quarterly Period Ending 31 July 1967
RCS-CSFOR

TO: See Distribution

SECTION I - Significant Organizational Activities

1. (C) General: This report covers the period 1 May 1967 through 31 July 1967, and is submitted in compliance with Headquarters I Field Force Vietnam Regulation 1-3 dated 23 March 1967, and Headquarters, 17th Combat Aviation Group Regulation 1-3, dated 12 July 1967.

a. Mission: The mission of the 52d Combat Aviation Battalion is to provide aviation support to US Forces, Republic of Vietnam Forces and Free World Assistance Forces operating in the II Corps area, with priority to the 4th Infantry Division.

b. Station Plan: The 52d Combat Aviation Battalion (Flying Dragons) is stationed at Camp Holloway, Pleiku, RVN and is commanded by LTC Paul C. Smithey. Subordinate elements consist of the following units, located as indicated: (Detailed list of detachments is shown in inclosure 1).

(1) Headquarters & Headquarters Detachment - Pleiku, RVN

(2) 119th Assault Helicopter Company - Pleiku, RVN.
Equipped with UH-1H and UH-1C (A) helicopters.

(3) 155th Assault Helicopter Company - Ban Me Thuot, RVN. Equipped with UH-1H and UH-1C (A) helicopters.

(4) 170th Assault Helicopter Company - Pleiku, RVN. Equipped with UH-1H and UH-1C (A) helicopters.

(5) 189th Assault Helicopter Company - Pleiku, RVN. Equipped with UH-1H and UH-1C (A) helicopters.

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(6) 179th Assault Support Helicopter Company - Pleiku, RVN. Equipped with CH-47 and OH-23 helicopters.

c. Type aircraft authorized and on hand as of 31 July 1967:

	<u>AUTHORIZED</u>	<u>ON HAND</u>
(1) UH-1C (A)	32	32
(2) UH-1C	2	0
(3) UH-1H	92	82
(4) CH-47	16	16
(5) U6-A	1	1
(6) OH-23*	<u>0</u>	<u>2</u>
TOTAL	143	133

* issued to 179th ASHC in lieu of 2 UH-1C aircraft.
OH-23's utilized by HQ, 17th CAG

(For a more detailed account, see inclosure 2)

2. (C) Intelligence: The Battalion S-2 section continued to publish a daily INTSUM which is distributed to all units at Camp Holloway, HQ, 17th Combat Aviation Group, and HQ, 4th Infantry Division.

a. Major enemy action centered in western and southwestern Pleiku province, and in central & northwestern Kontum province. Small unit probing actions have occurred on Camp Holloway perimeter on three occasions; however, no penetration was made nor have any mortar or rocket rounds been received. Enemy activity is expected to increase during the month of August in hopes of gaining a propaganda victory prior to the national elections on 3 September 1967. Areas of activity are expected to remain the same with probable mortar/rocket and sapper unit attacks on the airfields of Kontum and Pleiku cities.

b. Ground to air fire was reported on 46 occasions resulting in 35 aircraft hit, 3 crewmembers KIA, and 11 crewmembers WIA. Of the aircraft shot at, 20 were UH-1D (H), 18 were UH-1C, 8 were CH-47. Altitudes of aircraft receiving hits varied from 25 feet to 3500 feet; specifically, 27 received hits below 500 feet, 4 received hits between 1000-2000 feet, 1 at 3500 feet and 3 at an altitude unknown.

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c. A Camp Holloway counterintelligence plan was initiated on 11 June 1967. The objective of this plan is to (1) establish control over indigenous personnel, (2) identify potential informants to report on Viet Cong personalities, plans and activities, (3) identify and neutralize Viet Cong agents or sympathizers infiltrating the perimeter of Camp Holloway as part of the labor force in order to conduct acts of espionage or sabotage. The immediate results disclosed many weaknesses in methods of control of indigenous personnel. Several agents placed in critical facilities on post have furnished a considerable amount of information of tactical value, Viet Cong infrastructure, and local labor unions. All indigenous personnel have been given pamphlets and lectures explaining what information is desired, how to contact intelligence personnel, and that a reward may be given for information of value. This program is expected to gain momentum during the next quarter.

d. The Intelligence Section of the 155th Assault Helicopter Company has the responsibility of gathering intelligence information on the Ban Me Thuot area and receiving reports from all local civilian agents and military organizations in the Ban Me Thuot area.

3. (C) Operations and Training Activities

a. Operations

(1) Support: The Flying Dragons supported numerous operations including Francis Marion (92 days), Hancock I (10 days), Horace Greeky (38 days), Project Omega (56 days), and Prairie Fire (91 days). In addition, aviation support was provided II Corps Hq (92 days), Press Camp (30 days), 52d Artillery Gp (81 days), II Corps ARVN (88 days), Co "B" 5th Special Forces Gp (59 days), Pleiku Sub-Area Command (7 days). In general, during the reporting period the 52d Combat Aviation Battalion supported II Corps with one assault helicopter company; 4th Infantry Division with two assault helicopter companies and one assault support helicopter company, and II Corps ARVN with one assault helicopter company. The percentage of the battalion's lift capability allocated, by month, was as follows:

	<u>May</u>	<u>June</u>	<u>July</u>
4th Inf Div	62%	70%	71%
ARVN	14%	11%	10%
Other	24%	19%	19%

(For a detailed sequence of significant events and statistics, see inclosure 3; For a map of the operational area, see inclosure 4)

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(2) Operational statistics (1 May - 31 July)

<u>COMBAT SORTIES</u>	<u>OTHER SORTIES</u>	(Hours) <u>UH1C(A)</u>	(Hours) <u>UH1D/H</u>	(Hours) <u>CH-47</u>	(Hours) <u>TOTAL</u>
63,123	20,177	5281	20,560	3416	29,257
<u>PAX</u>	<u>CARGO (TONS)</u>	<u>A/C HIT</u>	<u>*A/C DAM/DEST</u>	<u>*CREW INJ/K</u>	
137,414	19,736	35	39/10	26/7	
<u>ENEMY K/A</u>	<u>STRUCTURES DEST</u>	<u>MED EVACS</u>	<u>SORTIES DELAYED OR CANCELLED FOR WEATHER</u>		
161	147	448	2607		

* includes results of hostile fire and accidents.

(3) 189th Assault Helicopter Company Arrival: The main body of the 189th Assault Helicopter Company deployed to Vietnam beginning 5 May 1967, and completed the move on 7 May. The company was assigned to the 52d Combat Aviation Battalion at Camp Holloway, Pleiku, RVN. The TO&E aircraft and equipment began arriving on 22 May, and for the next several days equipment was unpacked and a base camp finalized. Based on the previous training of the 189th, an operational readiness date of 15 June 1967 was established. During the intervening period, members of the unit received their in-country orientation, and flight crews were scheduled with other organic companies to become familiar with the area of operations and operational procedures. At the conclusion of the training, the company conducted two combat assaults under the supervision of the Battalion Commander prior to being declared operationally ready on 15 June 1967.

(4) Valorous Unit Citation: On 6 July 1967, MG Seneff, Commanding General, 1st Aviation Brigade, presented the Valorous Unit Citation to the Flying Dragons for extraordinary heroism during Operation Gibraltar, 18-20 Sept. 1966, and at Plei Me, 21-28 October. For the complete text of the citation, see inclosure 5.

(5) UH1-H Aircraft: During June and July all UH1-D aircraft were turned in and UH1-H aircraft were received. This increased the lift capability of the assault helicopter companies by approximately 75%.

(6) AGI-CMMI: During the period 12-16 June, the 52d Combat Aviation Battalion successfully completed the annual USARV AGI-CMMI.

(7) CH-47 Support: During June, the increase demand

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for CH-47 support in the Central Highlands made it necessary to reinforce the 179th Aslt Spt Hel Co. Four CH-47's from the 180th Aslt Spt Hel Co were stationed initially at Ban Me Thuot and later moved to Hol-loway. In July the 196th Aslt Spt Hel Co replaced the 180th Aslt Spt Hel Co.

(8) 335th Aslt Hel Co: In late May the 335th was moved into the Pleiku area to support the 173d Abn Bde. Although OPCON to the 173d, the 335th is attached for administration and logistics to the 52d Cbt Avn Bn. The statistics included in this report do not include those of the 335th Aslt Hel Co.

(9) Weather: During May the weather remained generally VMC with occasional early morning ground fog and afternoon thunder showers. Winds were predominantly out of the SW. During the first half of June the monsoons became an operational problem. Reduced ceilings and visibility in fog and rain precluded take-off until mid-morning, and generally, by 1600 hrs the weather again became too poor to fly. Winds were generally out of the West. After 15 June, the winds shifted to the E and SE and the weather was generally CAVU. From 26 June until 31 July the weather was characterized by low ceilings and visibility in rain and/or fog until 1000 hrs daily, improving during mid-day and becoming IMC prior to darkness. Winds westerly. (For a more detailed report, see inclosure 3).

b. Training

(1) During the reported period, the following subjects were stressed:

(a) Aviation Training

1. Instrument Training
2. Pre-Flight Inspections
3. Use of "GO-NO-GO" chart
4. Rules of Engagement
5. Monsoon Weather Procedures
6. Formation Flying
7. Escape and Evasion
8. Nha Trang, Cam Rahn and Saigon Control

Zone Procedures

9. Emergency Procedures

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(b) Ground Training

- vidual weapons.
1. Familiarization and zero firing of indi-
 2. Weapons Safety
 3. Security and Sentry Duty
 4. Mines and Booby Traps
 5. Field Sanitation
 6. Driver Safety
 7. Immediate action drills
 8. Viet Cong Tactics
 9. Gas Chamber exercises
 10. Geneva Convention
 11. Rules of Engagement
 12. Code of Conduct

(2) Particular effort was made to give each pilot at least one period of "in-the-soup" instrument training.

(3) All companies are required to have three instrument qualified crews ready for emergency deployment in any weather, day or night.

c. Research and Development

During the period, the Flying Dragons took part in the following tests to the degree indicated:

(1) "Snoopy" - the installation of "people sniffing" devices. Two kits were issued and installed. Testing continues.

(2) "Ringdrop" - airdrop of anti-personnel devices in large quantities. Areas to the west and east of Pleiku were saturated using both CH-47 and UH1-H aircraft as the delivery vehicle.

(3) Selective Aerial Spray System - a spray device, locally constructed, using a 55 gallon drum and a portable flame thrower pressure system. One was constructed and is awaiting testing.

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4. (C) Logistics

- a. Class I: No difficulties encountered during this period.
- b. Class II: Additional equipment was received during this period.
- c. Class III and IIIA: This support continues to be excellent.
- d. Class IV: No significant shortages or difficulties were encountered in procuring material.
- e. Class V and VA: Support and availability continues to be excellent.
- f. Refueling, Class III A:

(1) The use of 100 gpm pumps in mini-ports and relatively large refueling points is considered marginally adequate. This is caused by the low gpm pumps which required an excessive amount of time to refuel aircraft thereby increasing mission time requirements.

(2) Refueling at FSE's and FSA's operating 350 gpm pumps has proven excellent in response time and has reduced mission time requirements significantly.

(3) A study is currently being conducted by the 1st Aviation Brigade and subordinate units evaluating dispensing equipment. The outcome of this study cannot be forecast; however, this battalion will recommend larger dispensing pumps be made available to aviation units.

5. (C) Civil Affairs

The Battalion Civic Action Officer, the Battalion Chaplain and volunteers from the organic units have increased activities to include two more Montagnard villages in the battalion area of operations. The battalion has received many boxes of soap, vitamins and clothing from friends in the US. These items are distributed to village chiefs, Pleiku Province Hospital, the Christian and Missionary Alliance and Evangelical Hospital. The Battalion Civic Action Officer has obtained CARE agricultural tool kits, building materials, cloth and sewing kits for larger villages. In addition, the Battalion Surgeon has initiated an immunization program to combat plague and smallpox. Medical assistance visits with emphasis on basic hygiene, eg. washing and treating skin disorders, have almost eliminated the epidemic problem in three of the larger villages. The Battalion Civic Action Fund continues to receive donations from organizations interested in the program. Checks in the amount of \$270.00 have been received in May and June.

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6. (C) Personnel

a. PIO -PIO Activities During the Period May, June and July 1967.

(1) Feature stories submitted: 30

(2) Home Town News Releases Submitted: 99

(3) Unit Newspaper, "Dragon News", continued publication with circulation of 1500 monthly. Some difficulty was incurred in obtaining printing facilities and an adequate supply of paper.

(4) Nightly reports of daily aviation activities were furnished during the period. Overall improvement is needed in this area. Company level support was poor in the realm of feature highlights for the days activity. This matter has been given command emphasis.

b. Special Services Activities for the Period May - July 1967.

(1) During the period a total number of 317 out-of-country R&R quotas were received. The utilization rate of our R&R quotas remains favorable; however, in May and June the "no-show" rate for the battalion increased greatly. With the new R&R policy now in effect and better coordination between the SSO and the assigned units, the number of "no-show" will be greatly reduced.

(2) A total of 8 in-country R&R quotas were received for EM and 2 for officers. Utilization of in-country R&R quotas remains very good; however, the number of quotas received for the battalion is below the number needed.

(3) Construction of the Arts and Crafts Shop was slowed due to the non-availability of building materials and electrical equipment; however, it is now near completion and should be operational NLT mid-August. Re-sale supplies and equipment for the Arts and Crafts Shop are on hand and more are on order.

c. Awards and Decorations

(1) Total number of awards and decorations submitted during this period:

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<u>AWARD</u>	<u>NUMBER</u>
Silver Star	7
Distinguished Flying Cross	53
Other	1466

(2) Total number of awards and decorations approved during this period: 1698

d. Personnel Problems During the Period May - July 1967.

(1) The battalion is still experiencing difficulty in receiving replacements in our critical MOS shortages: Commo (MOS 35 series), Helicopter TI's (MOS 67N), and Maintenance Personnel (MOS 45 series). The battalion also continues to experience difficulty in obtaining sufficient numbers of personnel in MOS 11B.

(2) The month of July produced a situation concerning travel of personnel departing this command on special leave. If measures had not been taken by internal sources many of our personnel would have been denied the opportunity for this leave until the month of August. Assistance was obtained through Air Force means at Pleiku Air Force Base.

e. Command Changes

The following new commanders assumed command during May, June and July 1967:

<u>COMMANDER</u>	<u>UNIT</u>	<u>DATE</u>
MAJ George F. Christensen	405th Trans Det	15 May 1967
MAJ John P. Doyle Jr.	170th Aslt Hel Co	15 May 1967
MAJ Howard J. Hoffman	179th Aslt Spt Hel Co	1 Jun 1967
CPT Billy J. Campbell	402d Trans Det	1 Jun 1967
CPT Robert C. Handcox	Hq Det, 52d CAB	13 Jun 1967
MAJ Bobby L. Sanders	189th Aslt Hel Co	2 Jul 1967

f. Gains and Losses

The following gains and losses occurred during May, June and July 1967:

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(a) <u>GAINS</u>	<u>OFF</u>	<u>EM</u>
May	44	54
June	58	55
July	9	56
(b) <u>LOSSES</u>	<u>OFF</u>	<u>EM</u>
May	45	135
June	71	176
July	33	203

g. Morale

The morale of enlisted and officer personnel throughout the battalion remains at an exceptionally high state. Factors contributing to this high state of morale are as follows:

- (a) Maximum recognition for job accomplishment through promotion, awards and decorations, and letters of appreciation.
- (b) Liberal policy towards leaves and R&R.
- (c) Maximum effort to continually improve standards of living.
- (d) Availability of post facilities; ie, Post Chapel, Post Library, Athletic Facilities and Post Theater.
- (e) Continual indoctrination in job accomplishments, importance of mission, and relative standing with other battalions in such areas as mission accomplishments and aircraft availability.

h. Religious Activities During the Period May - July 1967.

- (1) During the quarter the Battalion Chaplain was responsible for all religious activities at Camp Holloway and at the operational sites. Protestant services were conducted by the Battalion Chaplain.
- (2) Religious services were provided for the 155th Aslt Hel Co in Ban Me Thuot on a weekly basis by the Protestant missionaries and the Catholic Chaplain from MACV.

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(3) Catholic services for Camp Holloway were conducted each Sunday by the PSAC Chaplain.

(4) During the quarter, weekly Jewish Sabbath services were started at the 18th Surgical Hospital Chapel. Transportation is provided from Camp Holloway to these services for all Jewish personnel.

(5) During the quarter, a Sunday evening service was added to the schedule of Protestant activities. This service included singing, religious films, a fellowship period and refreshments.

(6) During the quarter, a Wednesday evening Bible study was added to the schedule of Protestant activities.

(7) The 189th Aslt Hel Co laid a concrete sidewalk in front of the Chapel.

7. (C) PSYOPS - Aviation units have supported the Chieu Hoi and Hoi Chanh Program by designing a distinctive leaflet with specific rally instructions. The 52d Combat Aviation Battalion has distributed one million unit leaflets and safe conduct passes. One leaflet gives rally instructions which are designed to augment a 4th Infantry Division leaflet which has a map locating rally points in the Western portion of Pleiku Province. The leaflets are packed in small bundles (8,000 to 10,000) for pinpoint distribution. This is accomplished from unit helicopters over known enemy locations, or suspected routes. (Leaflet and English translation are shown in inclosure 6).

8. (C) Signal

a. In June the communications facilities in the alternate battalion COC bunker were expanded to approximate the facilities in the main COC bunker. Three FM radios, an SB-22 switchboard and necessary field wire lines to guard posts were installed.

b. In June the underground cable that provided 15 dial telephone circuits between Camp Holloway and the Pleiku area was cut by a unit constructing a new heliport at Camp Holloway. Additional VHF equipment (TRC-24's) was installed to replace the underground cables. Sole user circuits from the Camp Holloway airfield tower to Hensel tower and New Pleiku tower were also installed at this time.

c. In July a project was initiated to replace the field wire telephone lines at Camp Holloway with commercial 25 pair cable. Additional telephone poles are being set to avoid laying the cable on the ground and to facilitate maintenance.

9. (C) Aircraft Maintenance

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	<u>UH1-C</u>	<u>UH1-D/H</u>	<u>CH-47</u>
Aircraft authorized:	32	92	16
Aircraft assigned (avg.):	27.3	76.6	15.8
Availability rate:	84.9	88.7	75.7
EDM rate:	10.9	9.9	22.0
EDP rate:	4.2	1.4	2.3

For detailed statistical data, see inclosure 7.

b. During the reporting period the battalion turned in all UH1-D helicopters and was issued new UH1-H helicopters, equipped with the T53-L-13 turbine engine. Several problem areas have been experienced with this new helicopter and engine. These are presented in section II.

Section II: Commander's observations and recommendations Part I, Observations (Lessons Learned)

1. (C) Operations

a. Item: Third Party Support

Discussion: Two brigade size units with organic/attached aviation companies became OPCON to 4th Infantry Division during the period. On numerous occasions, the 4th Infantry Division provided their D/S 52d Combat Aviation Battalion aircraft to these brigades for combat assaults and other troop movements. A difference in planning procedures, employment policies, techniques and terminology caused some difficulty initially.

Observation: Direct liaison must be made with all new units moving into the supported AO. Coordination becomes even more critical when the new units have organic/attached aviation. It cannot be assumed that the major unit controlling the AO will accomplish this liaison.

b. Item: Monsoon Season Planning

Discussion: Supported units scheduled large airmobile repositioning operations when the forecasted weather trend was toward continued low ceilings and reduced visibility. The lifts were often scheduled to begin just after dawn and just as often were delayed by weather until mid-morning, or early afternoon, or were eventually cancelled. Some operations had to be terminated because of zero-zero conditions in the IZ area prior to completion of the move, leaving small

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units isolated for 12 to 24 hours. Aside from the tactical problems, aviation and ground units were on immediate standby for extended periods prior to movement.

Observation: Low ceilings and restricted visibility are to be expected during portions of the Monsoon season. Much time is wasted unless all phases of planning seriously consider weather as a limiting factor.

c. Item: Language Proficiency

Discussion: The 52d Combat Aviation Battalion supports Republic of Vietnam Forces in combat operations on a daily basis. The total lack of assigned aviators with Vietnamese language proficiency hinders operations considerably. The additional time required in planning, the loss of flexibility once the operation has begun and the difficulties in providing effective fire support once the unit is on the ground are only a few of the problems.

Observation: There exists a definite need for language trained aviators. If assigned to the unit level, these aviators could do much toward eliminating the problems mentioned above.

d. Item: UH-1H Overstress

Discussion: The improved lift capability of the UH-1H with the L-13 engine has, for the first time, given units operating in the highlands the capability to overload the aircraft without a corresponding apparent loss of power.

Observation: Loads must be calculated prior to take-off so as not to exceed the maximum gross weight for the aircraft.

e. Item: UH-1H Lift Capabilities

Discussion: The introduction of the UH-1H with the L-13 engine has almost doubled the lift capability of the assault helicopter companies operating in the Central Highlands. Extensive tests have shown that 7 US or 8 ARVN troops can be carried under virtually any conditions. (See inclosure 8)

Observation: Combat operations are greatly enhanced by the use of UH-1H aircraft.

2. (U) Safety

a. Item: Protective Clothing

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2.

Discussion: During this quarter, five (5) aircraft fires have occurred as a result of accidents or combat damage. In one instance two crew members escaped serious injury when they leaped from a burning helicopter while it was approximately 25 feet in the air. The aircraft commander and pilot, who remained with the aircraft during the descent, suffered body burns despite compliance with existing regulations pertaining to protective clothing. The fatigue uniform which both were wearing afforded very limited protection from the fire. The injured personnel have been hospitalized three months recovering from burns which would have been prevented had fire retardant clothing been worn.

Observation: Flight clothing made from fire retardant NOMEX material has been field tested by this battalion on two occasions. Results of the first test indicated that the clothing was unacceptable because of skin irritation caused by rough fiber ends. The flight clothes worn during the second test which was completed in May 1967 was acceptable in all respects. The battalion is still awaiting issue of fire retardant flight clothing.

b. Item: Accidents Caused by Loss of RPM

Discussion: Thirty-five percent of the accidents occurring in this battalion during FY 67 resulted from aircraft losing RPM during landing and take-off attempts. These accidents can be attributed in part to the high density altitudes common to the Central Highlands and resulting reduced performance capabilities of the UH1-D.

Observation: This battalion has recently received UH1-H aircraft with the T53-L-13 engine installed. These new aircraft have increased altitude and lift capabilities which should eliminate accidents caused by loss of RPM. Reports from users indicate that the aircraft can be operated safely in areas at 5000 feet msl with 1000 pounds of fuel and a 1600 pound payload.

3. (C) Maintenance

a. Item: Installation of Crewchief and Gunner Rifle Racks for UH-1 aircraft.

Discussion: During the past year several individual weapons have been lost due to the weapons falling out of aircraft in flight. In order to provide an adequate means of securing the crews' individual weapons in the aircraft, rifle racks were designed and installed in all UH1-H and UH1-C aircraft within this battalion. (Attached as inclosure 9 are instructions for fabrication and installation of these rifle racks.)

Observation: The installation of these weapon racks will prevent the loss of individual weapons in flight. Additionally these racks prevent the individual weapon from becoming hazardous missiles in

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the event of an aircraft accident.

b. Item: Inadequacy of UH1-H Aircraft and T53-L-13 Engine Publications

Discussion: TM 55-1520-10 dated 28 Dec 65 with 9 changes and TM 55-1520-210-20 dated 28 Dec 65 do not include the inspection and/or removal requirements of the aircraft dynamic components under the varying overtorque conditions which may be encountered. A TWX (origin unknown) received by the 189th Assault Helicopter Company while at Fort Carson, provides very limited guidance in this matter and its authority is unknown. Bell Helicopter Company letter, subject: T53-L-13 Lycoming engine limitations and TBO data, dated 13 April 67 also provides guidance in this matter, but the information differs from that contained in the TWX and does not contain adequate detail. For example, the TWX states that an inspection is required every time torque pressure goes over 50 PSI, while the Bell Helicopter Company letter reflects that inspections are not required until torque pressure goes over 54 PSI. The TWX instructions are more specific in the details of inspection, while the Bell Helicopter Company letter only cites for example, "main rotor pillow block bolts" without specifying whether they should be removed and discarded or inspected and replaced, nor does it state how bolts or other items should be inspected, ie, visual, dye penetrant, magna-flux, etc.

A second problem this battalion has encountered with this new T53-L-13 engine is the near impossibility of accepting all of the engine overspeed limitations as outlined on pages 3-13 and 3-14, TM 55-1520-210-20. This published guidance states that an engine overspeed exists with the T53-L-13 engine:

- (1) When N1 speed exceeds 101.5 percent
- (2) When steady state output shaft speed exceeds:
 - (a) 7180 RPM as a maximum limit.
 - (b) 6640 RPM for more than two seconds when the N1 speed is above 85 percent.
 - (c) 6700 RPM when the N1 speed is 85 percent or less (time unlimited).

The instructions for rigging the power turbine governor RPM controls as published in paragraph 5-228 N, page 5-78, TM 55-1520-210-20 state that the governor RPM switch should be adjusted to provide a range from 6000 to 6700 (plus minus 50 RPM). Since this measurement is to be made with the collective pitch control in the full down position, it therefore must have been assumed by the technical data writer that the N1 speed will be less than 85 percent. With the earlier series engines this

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was true, but when the T53-L-13 engine operates above the 6000 RPM range, the N1 speed rarely operates below 85 percent and normally ranges from 85 to 90 percent. It is then obvious that if the governor is set at the 6650 RPM allowed by the instructions on page 5-78, then the engine will exceed the overspeed limitations listed in paragraph 4b (2) and (3) above, in both cases. Even the minimum adjustments of the governor at 6650 RPM exceeds the overspeed limitation in 4b (3) above. Additionally it is extremely difficult for pilots to avoid exceeding the 6640 and 6700 RPM limitations when making a rapid descent in flight. The 6900 RPM limitation as prescribed for the earlier series T53 engines is considered a much more practical limitation from a pilot's viewpoint.

Observation: On 12 and 22 June 67, two separate DA Forms 2028 were forwarded to headquarters USAAVCOM requesting clarification of this overspeed difficulty. An answer to the DA Form 2028 was received on 1 August 67, and basically advises that the figure 91% will be substituted for the 85% N1 speed specified in the overspeed criteria. This information will be published in a change to TM 55-1520-210-20. The feasibility of raising the 6700 RPM limitation to 6900 RPM when the N1 speed is 91 percent or less was not discussed in the DA Form 2028.

c. Item: Excessive wear within the engine to transmission drive shaft.

Discussion: During the first periodic inspection conducted of the aircraft of the 189th Assault Helicopter Company, eleven out of twenty-one drive shafts were found to be worn or damaged beyond acceptable limits. With this discovery this headquarters directed an immediate inspection of all H model main drive shafts. The 155th Assault Helicopter Company experienced a similar problem, as three drive shafts were damaged or worn beyond limits, out of 15 inspected. The aircraft in the 155th Company, however, had fewer flying hours prior to the inspection. A total of 80 drive shafts were inspected with thirty-seven rejected on the first inspection. The remaining drive shafts were cleaned and repacked, and on the second inspection only seven short shafts were condemned.

Observation: A sample of the lubricant found in the defective drive shafts was sent to Bell Laboratories for analysis. The lab report stated that the lubricant was "anderol". The Bell Representatives at Tan Son Nhut and Vung Tau were notified of this problem and as a result information was received that a program was implemented to inspect and repack the main drive shafts on all UH1-H helicopters arriving in country. Additionally this battalion forwarded an urgent action EIR on this problem. It is suspected that the problem was caused by the break down of the proper lubricant or by improper packing procedures prior to shipment to Vietnam.

d. Item: Engine foreign object damage caused by ingestion of

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turnlock fasteners (DZUS)

Discussion: Two T53-L-13 engines in the 189th Company required change due to F.O.D. Investigation revealed that the turnlock fasteners which attach the engine induction baffel assembly to the airframe, Ref. fig 82, TM 55-1520-210-20, dated May 67, failed and were ingested into the engine. A third engine in the 170th Helicopter Company also ingested a turnlock fastener.

Observation: All units were immediately instructed to inspect all aircraft. The following is a result of the inspection:

Number of aircraft inspected:	91
Number with missing fasteners:	6
Number with loose fasteners:	5
(Not just unfastened)	

A partial solution to this problem would be to install a screen over the intake of the particle separator. A message from the 17th Aviation Group has provided a temporary fix by replacing the turnlock with a AN3 bolt. One permanent solution is to install a turnlock fastener that, even if left unfastened, would not come out and be ingested by the engine.

4. (U) Signal

a. Item: Reliability of Field Wire, WD-1/TT

Discussion: During the rainy season, excessive moisture compounds the problem of maintaining field wire lines. Field wire that has been installed for a number of months will deteriorate resulting in grounding or breaks.

Observation: If sufficient lines are utilized in populated areas, field wire should be replaced with 25 pair commercial type cable or spiral four cable.

b. Item: Failure of impedance matching network. Bell Helicopter Part No 204-075-399.

Discussion: During the past month a high failure rate of the impedance matching network (component of UH1-H avionics system) has been experienced. A Federal Stock Number for the item is not available.

Observation: An EIR has been submitted. Requisitions have been submitted using Bell Helicopter Part Number.

5. (U) Civil Affairs

C O N F I D E N T I A L

C O N F I D E N T I A L

a. Item: Civic Action Support

Discussion: The battalion civic action officer has been approached on 3 separate occasions by Vietnamese persons requesting assistance. In each instance the request had high emotional appeal and appeared to be a worthwhile project. The initial impression was that there were no resources available from GVN or US units. All requests involved building materials. Upon inquiry it was discovered that assistance was already being given; in one case, by an Air Force unit and in the other two, by US Army and USAID agencies.

Observation: The battalion S-5 officer has found that coordination through the sector S-5 or CORDS provided the best method of determining worth of projects, and that each project should be checked through the central CORDS agency.

Part II, Recommendations

1. (U) Safety - reference Section II, Part I, para a. It is recommended that NOMEX flight clothing be procured and issued to all Army Aviation crewmembers.

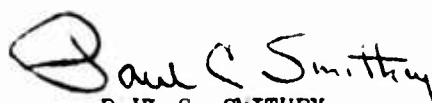
2. (U) Maintenance

a. Reference Section II, Part I, para 3a. Recommend that all Army Aircraft scheduled for deployment in Vietnam have weapons racks installed at the time of manufacture. The locally manufactured racks are adequate and perform the job very well, however, better racks and better positions could be engineered for installation during the production of aircraft.

b. Reference Section II, Part I, para 3b. Recommend that a greater effort be made to furnish units receiving such new equipment, with more complete technical publications prior to the receipt of the new equipment.

c. Reference Section II, Part I, para 3c and 3d. Excessive wear of drive shaft and engine foreign ingestion damage: These problems appear to be caused by an inadequate quality control system, both for the lubricants and airframes. A more comprehensive quality control program is recommended, especially on high volume manufactured items, such as lubricants and UH-1 helicopters. These examples are a good indication that the quality control programs need additional emphasis.

9 Incl


PAUL C. SMITHEY
LTC, TC
Commanding

C O N F I D E N T I A L

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9 Incl

- ~~1. List, 52d CAB Detachments~~ Withdrawn, Hqs, DA
2. Recapitulation of flying hours and availability
- ~~3. Chronological sequence of significant events~~
- ~~4. Map of operational area~~
- ~~5. Extract GO 3 - Valorous Unit Citation~~
- ~~6. 52d CAB rally leaflet with English translation~~
- ~~7. Recapitulation of availability, mission ready, EDP and EDM percentages by month~~
8. Ltr, 52d CAB, dtd 19 Jul 67, subj: Operational Capabilities of UH1-H Helicopter
9. Instructions - Fabrication of Aircraft Rifle Racks

Withdrawn,
Hqs, DA

DISTRIBUTION:

- 1 cy thru: 17th CAG
- thru: IFFORCEV
- thru: 1st Avn Bde
- thru: USARV
- thru: USARPAC
- TO: ACSFOR DA
- 2 cy thru: 17th CAG
- TO: ACSFOR DA ✓
- 2 cy TO: USARPAC
- 3 cy TO: USARV
- 1 cy TO: 1st Avn Bde
- 1 cy thru: 17th CAG
- TO: IRRORCEV (File)
- 1 cy TO: 17th CAG (File)

C O N F I D E N T I A L

(CONFIDENTIAL _

AVGD-SC (7 Aug 67) 1st Ind
SUBJECT: Operational Report for Quarterly Period Ending 31 Jul 67,
UIC WCYMHBK, RCS CSFOR 65.

HEADQUARTERS, 17TH COMBAT AVIATION GROUP, APO 96240 25 Aug 67

TO: Assistant Chief of Staff For Force Development, Washington D.C. 20310

1. (U) The 52d CAB Operational Report for Quarterly Period ending 31 Jul 67 is forwarded for information and action as necessary.

2. (U) This headquarters has reviewed this ORLL and concurs with the report as modified herein.

3. (C) Reference Section I, Significant organizational activities.

a. Reference para 6d

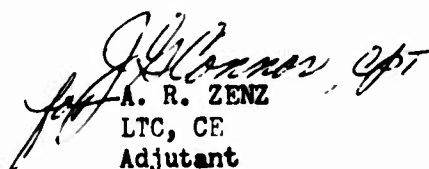
(1) The MOS shortages are prevalent throughout the 17th Aviation Group. All shortages are on requisition. USARV AG is aware of these personnel shortages. USARV has indicated that personnel substitution can be expected for MOS 11B, infantrymen, except for the Pathfinders detachments.

(2) During July there was a critical shortage of available airlift. This has since been solved.

b. Reference para 6f, the aviator strength is maintained close to the authorized manning level of 90%. The enlisted over strength throughout the period steadily declined so as to approach the authorized strength.

4. (C) Reference Section II, Part I, para 4b. 52d CAB has obtained two of these items from wrecked aircraft. This has been a problem in "H" models only. Items currently under study to find suitable like parts in Army supply system.

FOR THE COMMANDER:


A. R. ZENZ
LTC, CE
Adjutant

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 52D COMBAT AVIATION BATTALION
APO San Francisco 96310
"FLYING DI / CONS"

AVGD-CZ

5 August 1967

SUBJECT: Recapitulation of Flying Hours

Unit	Month	UH-1C		Hours Flown	Avg. Hours Guns	Avg. Hours Ability	UH-1D/H		Hours Flown	Avg. Hours Slicks	Avail- ability	Combined		Percent of DA Program
		Avg. On Hand	Avail- ability				Avg. Slicks	On Hand				Total Hours	Combined Avg. Hours	
119th	May	7.2	31.7	456	63.3	31.7	20.5	20.5	1827	89.1	80.2	2283	59.6	149%
	Jun	7	69.5	404	57.7	69.5	22.0	22.0	1715	77.9	93.2	2119	73.0	122%
	Jul	7.2	80.9	516	71.7	80.9	22.7	22.7	1836	85.3	96.4	2354	80.0	134%
155th	May	6	62.7	574	71.8	62.7	18.4	18.4	1898	103.2	55.9	2473	73.7	156%
	Jun	6	60.0	490	62.2	60.0	20.3	20.3	1839	90.6	93.3	2337	81.6	137%
	Jul	6	82.6	423	52.9	82.6	22.3	22.3	1712	76.8	93.2	2135	70.5	118%
170th	May	7.1	60.2	546	76.9	60.2	19.7	19.7	2360	121.3	81.9	2934	107.5	103%
	Jun	6.9	82.3	420	60.8	82.3	20.0	20.0	1855	92.8	87.5	2275	82.3	137%
	Jul	6.4	87.2	377	50.9	87.2	21.4	21.4	1731	80.9	93.4	2108	75.8	126%
189th *	May	6	69.5	64	10.5	69.5	23.0	23.0	217	9.4	97.4	301	9.7	N/A
	Jun	6	94.6	401	50.1	94.6	22.2	22.2	1478	68.6	92.5	1879	68.2	111%
	Jul	6	87.0	582	72.8	87.0	22.2	22.2	2061	92.8	82.3	2643	87.5	146%
52nd	May	22.3	61.5	1576	70.7	61.5	56.7	56.7	6114	104.2	83.3	7690	94.9	158%
	Jun	29.9	86.6	1723	57.6	86.6	64.5	64.5	6807	81.5	91.4	8610	75.3	126%
	Jul	29.6	86.4	1098	64.1	86.4	66.6	66.6	7342	84.8	91.3	9240	79.5	133%

Unit	Month	UH-1C		Hours Flown	Avg. Hours Guns	Avg. Hours Ability	UH-1D/H		Hours Flown	Avg. Hours Slicks	Avail- ability	Combined		Percent of DA Program
		Avg. On Hand	Avail- ability				Avg. Slicks	On Hand				Total Hours	Combined Avg. Hours	
179th	May	15.4	73.6	1134	73.6	73.6	73.6	73.6	1478	81.5	91.4	75%	75%	158%
	Jun	16	71.0	1136	71.0	71.0	71.0	71.0	1418	81.5	91.4	76%	76%	126%
	Jul	16	71.0	1146	71.0	71.0	71.0	71.0	1436	81.5	91.4	70%	70%	133%

* On total for May 67 do not include 189th Co as unit was not operational

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 52D COMBAT AVIATION BATTALION
APO San Francisco 96318
"Flying Dragons"

AVGD-CC

19 July 1967

SUBJECT: Operational Capabilities of UH-1H Helicopters

TO: Commanding Officer
17th Combat Aviation Group
APO US Forces 96240

1. The 189th Assault Helicopter Company, equipped with 22 UH-1H helicopters, became operational on 15 June 1967. Since that time, the 52d Combat Aviation Battalion has conducted extensive user tests to determine the operational capabilities of the UH-1H. The method of testing, results and recommendations are contained herein.

2. Each aircraft was considered a separate test vehicle and a form, attached as inclosure 1, was maintained on each. The unit was requested to obtain test readings under varying meteorological and load conditions using the following standards for computing gross weights:

- a. Max Gross - 9500 lbs.
- b. Operating weight of aircraft, less fuel - 6700 lbs.
- c. Each Pax - 250 lbs.

With the above, the pilot could easily compute the allowable load by reading his fuel gauge, counting passengers and estimating cargo weights.

3. From the data obtained during the period 15 June to 15 July, it has been determined that the UH-1H can transport the maximum gross load under all conditions and circumstances found in the central highlands, without exceeding the maximum allowable torque of 50 PSI. The 52d Combat Aviation Battalion has, however, experienced 3 over-torques, summaries of which are attached as inclosure 2. It was determined that engine over-torque occurs under the same conditions and circumstances as a loss of power in the UH-1D. This matter has received positive command emphasis during past commander's conferences and will continue to receive command emphasis within the 52d Combat Aviation Battalion.

AVGD-CC

19 July 1967

SUBJECT: Operational Capabilities of UH1-H Helicopters

4. In addition to providing performance data on a given aircraft, the attached performance form further provides a management tool for the unit commander in the following areas:

a. From this form, the commander can analyse the techniques and capabilities of each pilot under a given condition.

b. The commander can determine engine performance and strength of each aircraft. This can assist maintenance personnel in detecting and isolating minor problems before they become major.

5. Based upon the preliminary test and coordination with ground commanders, the optimum load of 7 combat equipped U.S. troops has been established. With 1000 lbs of fuel, this can be accomplished without exceeding the maximum gross weight of the aircraft or the engine torque limitations. This load has proven to be highly satisfactory with the supported ground commanders and is well within the capabilities of the UH1-H helicopter.

6. Testing will continue for the next month on all UH1-H's assigned to the 52d Combat Aviation Battalion. The final results and validity of the test as a maintenance predictor has yet to be determined.

7. It is recommended that a similar program be followed by other units in the 17th Combat Aviation Group as they receive UH1-H aircraft.

2 Incl

1. UH1-H Performance Chart
2. Summaries of over-torques
(Not included)

PAUL C. SMITHEY

LTC, TC

Commanding

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UH-1H PERFORMANCE CHART

A/C #

ITEM FUEL CARGO PAX ELEV TEMP WIND N_1 TORQUE EGT GROSS WT TYPE T.O./LANDING REMARKS

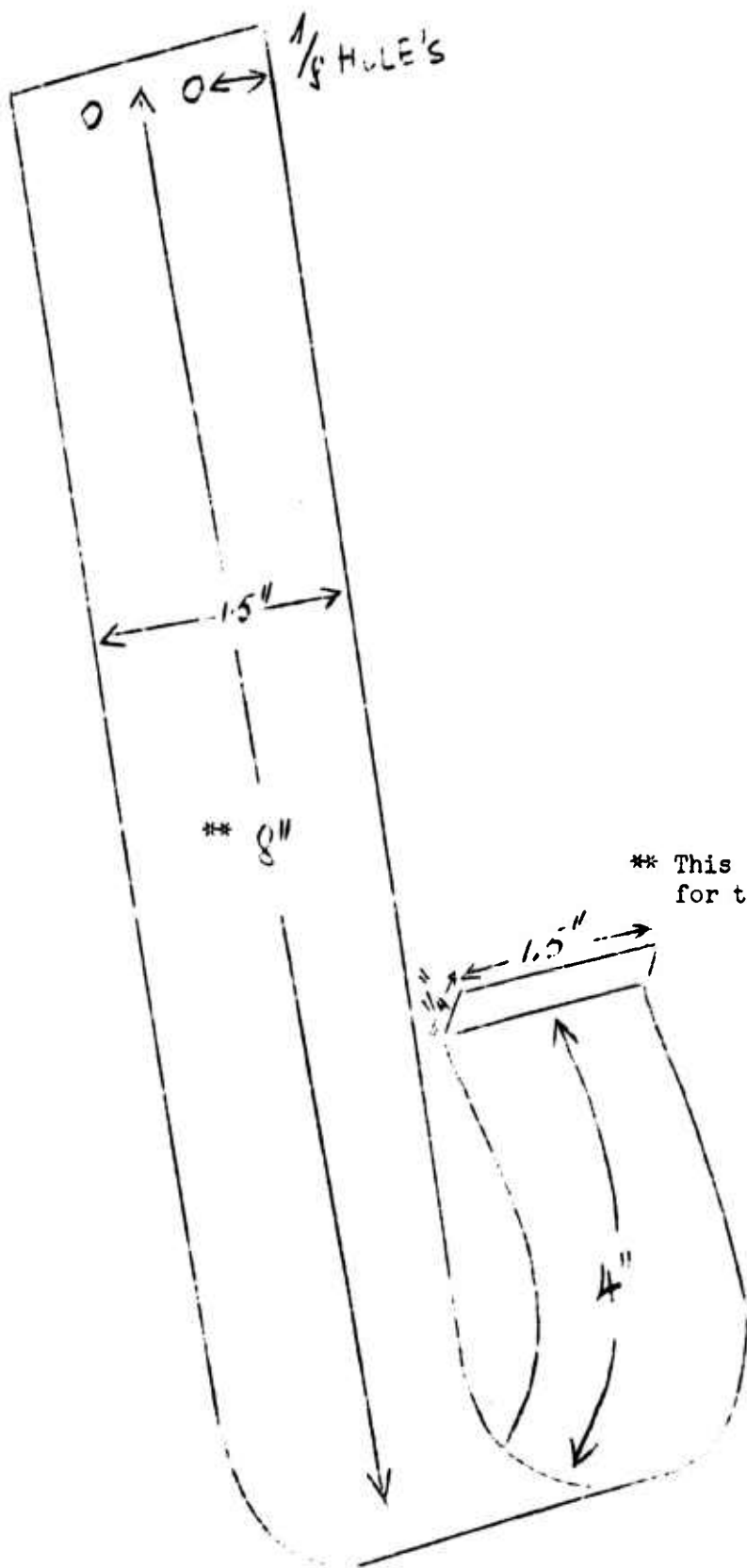
SUBJECT: Fabrication and Installation Instructions of Rifle Racks for UH-1C Aircraft.

1. Fabricate four rifle racks as shown in Figure I using .032 stainless steel or .063 aluminum alloy.

2. Unsnap the rear cargo sound-proofing from the rear fuselage bulkhead, just enough to get to the screws. There are two screws (1OR32) located about 24 inches from the door. Remove these screws, punch two holes in the sound-proofing at the screw hole locations, and install the short gun rack using the screws removed. Proceeding inboard another 18 or 20 inches more on the bulkhead are two more screws. Remove these screws, punch two holes in the sound-proofing at the proper location, and using the screws removed, install the long gun rack. The same procedure will apply on the other side of the aircraft.

3. When the weapon is placed in the rack, the butt of the weapon should fit up against the upper door well as shown in Figure II, which will prevent the weapon from falling out of an open door during a steep bank.

25

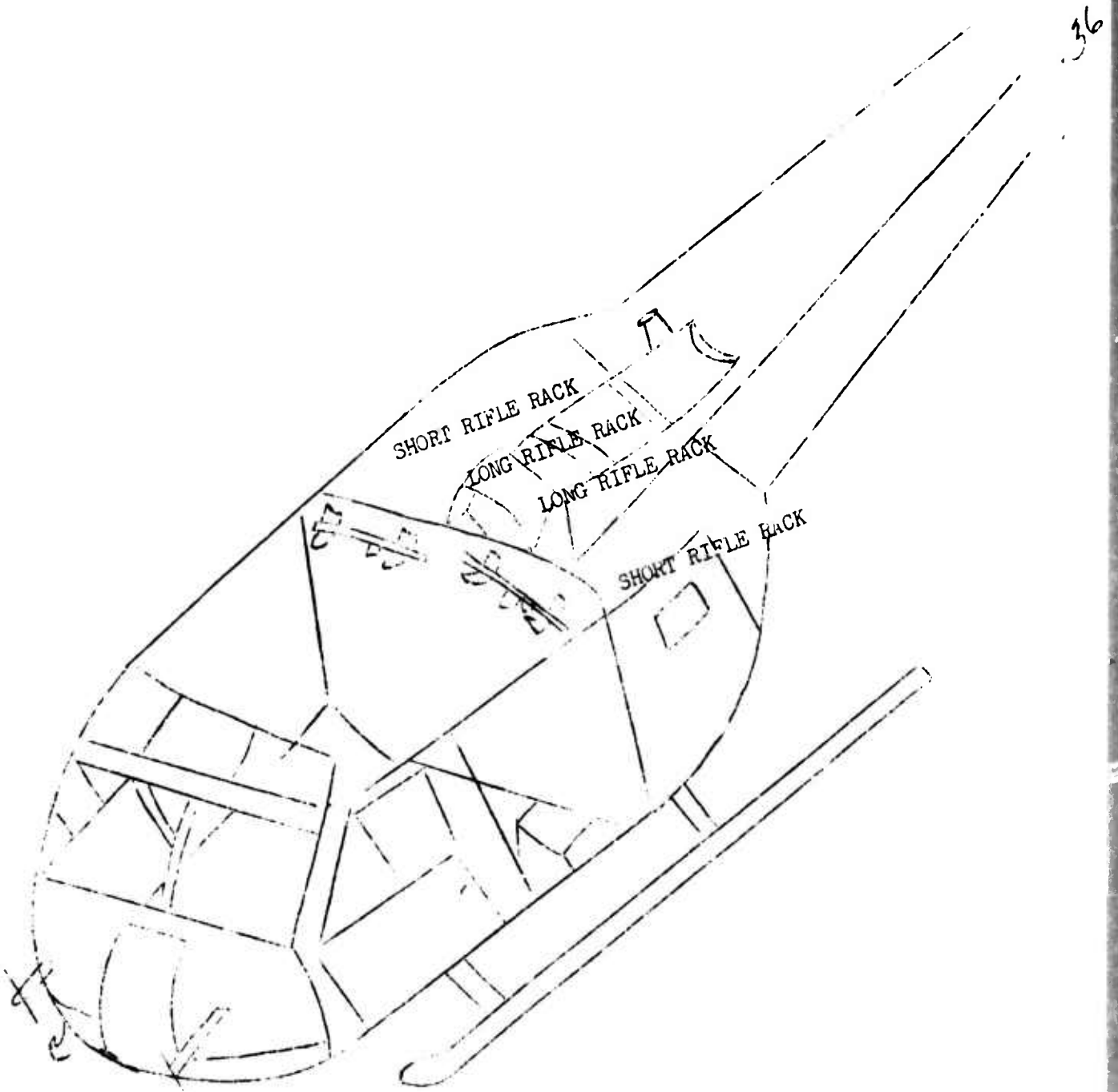


** This length will be 7"
for the Short Rack

RIFLE RACK FOR UH-1C

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Figure 1



Rifle Rack Installation for UH-1C

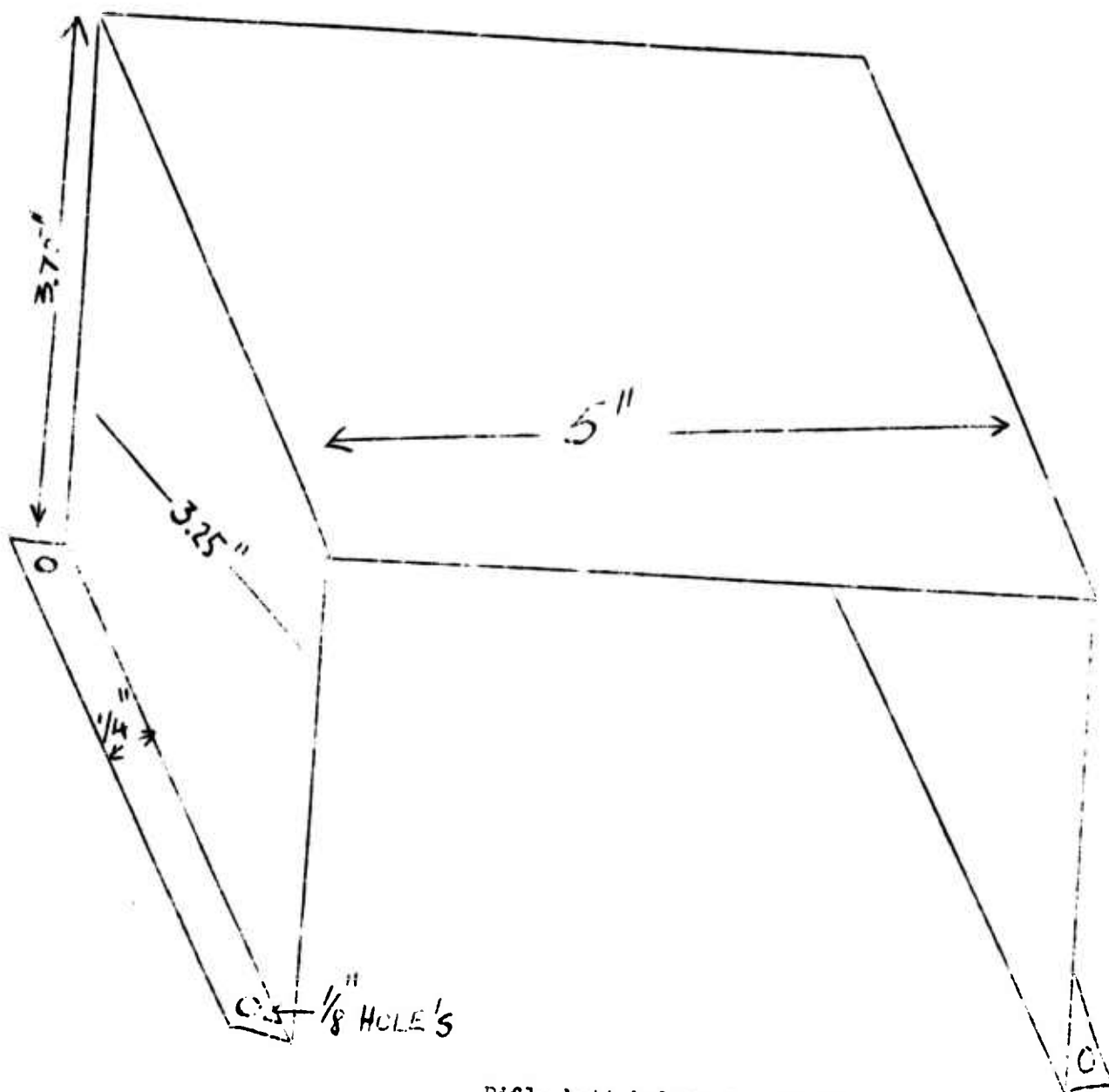
Figure II

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SUBJECT: Fabrication and Installation Instructions of Rifle Racks for
UH-1H Aircraft.

1. Fabricate two rifle butt holders as shown in Figure III using .032 aluminum alloy and fabricate two rifle barrel holders as shown in Figure IV using .032 stainless steel or .032 aluminum alloy.

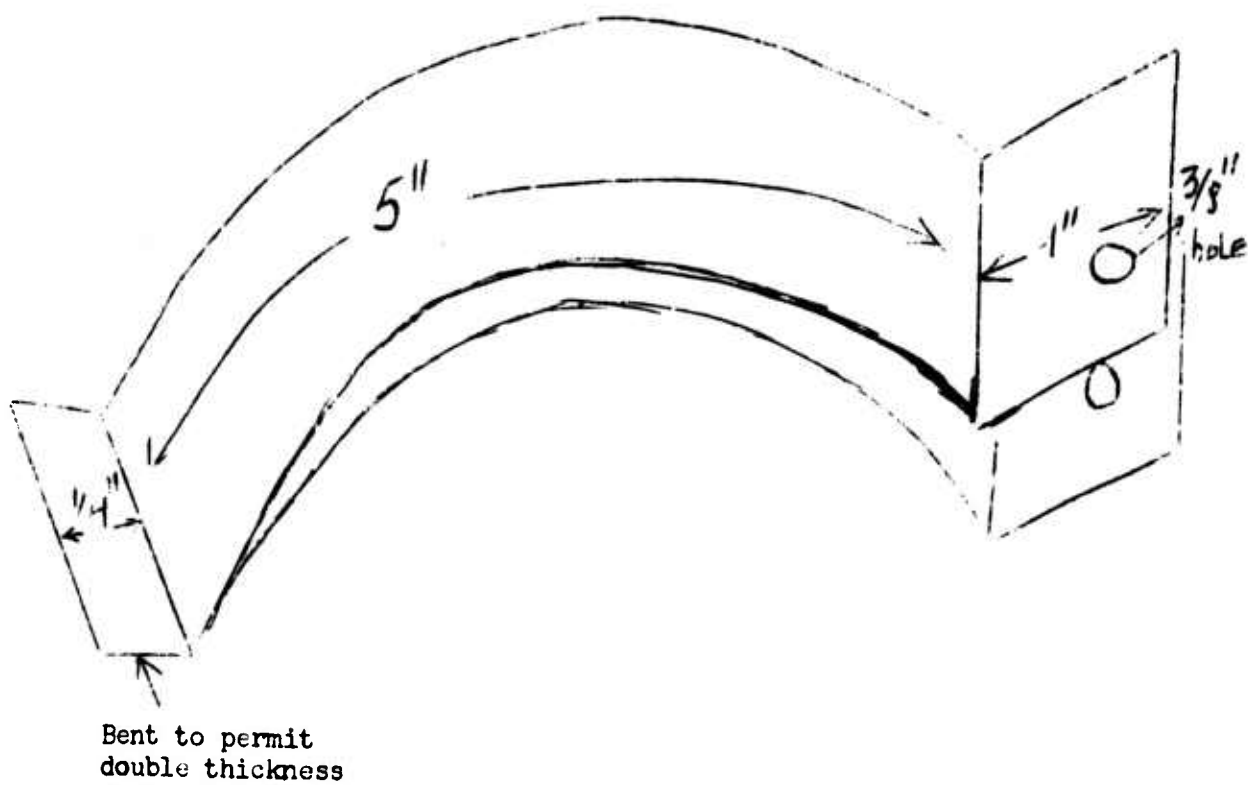
2. A heater duct panel is located just above the floor at the outboard edge of the rear bulkhead on each side of the UH-1H helicopter. Some of these panels have air duct ports installed and some have only a plate. Remove the eight screws (10R32) holding the ducts (if installed) or the plate and install the rifle butt holder using four of the screws removed as shown in Figure V. Using a bolt, AN 3F4A, install the rifle barrel holder in one of the tie down ring positions on the aft bulkhead as shown in Figure V. This barrel holder will be installed at the appropriate tie down hole which permits adequate security of the type rifle (M-14 or M-16) normally utilized by the crew.

3. Drilling of additional holes is not required to accomplish this installation.



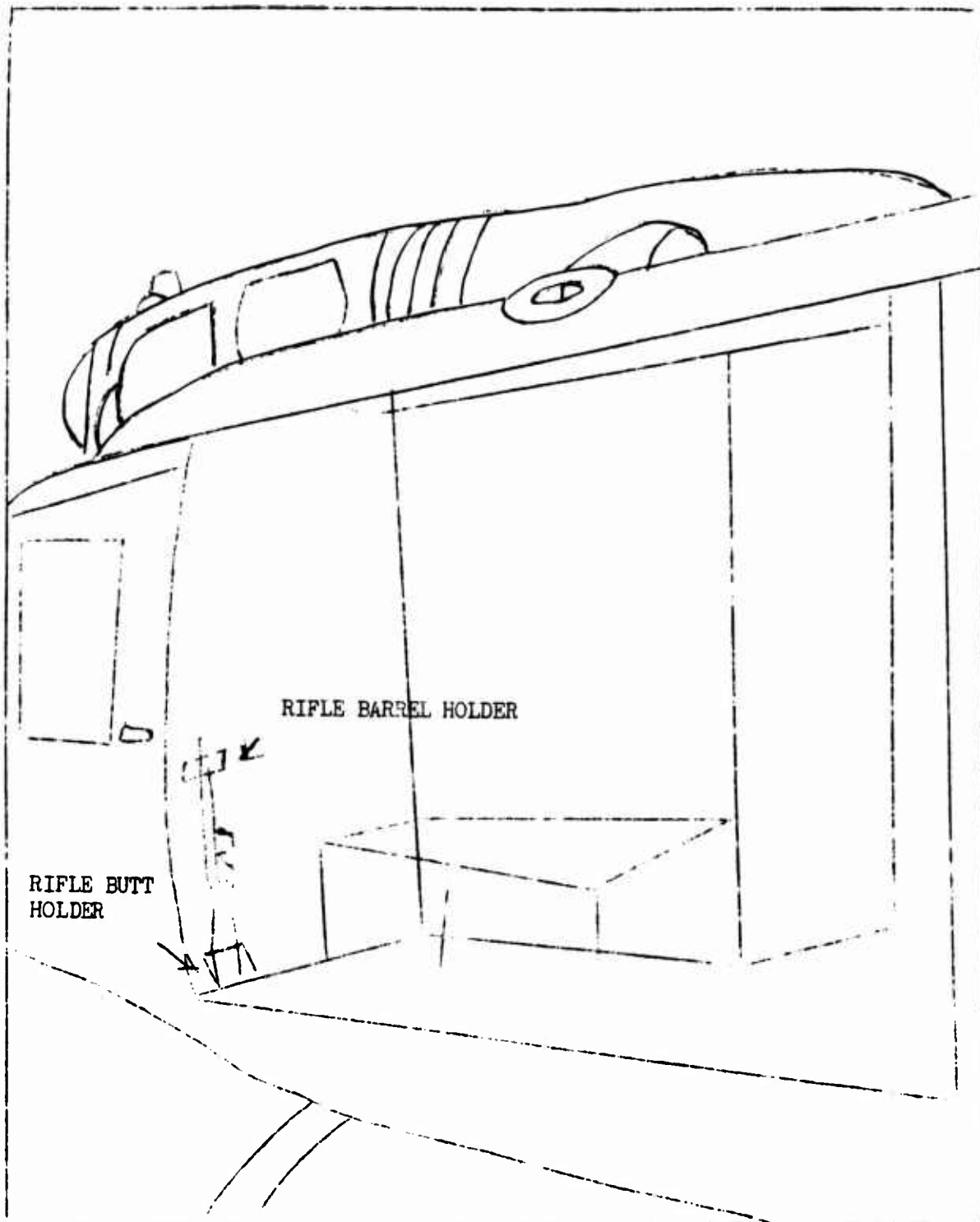
Rifle butt holder for UH-1H

Figure III



Rifle barrel holder for UH-1H

Figure IV



Rifle Installation for UH-1H

Figure IV

DOCUMENT CONTROL DATA - R & D

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